REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Final Office Action mailed on November 19, 2007, and the references cited therewith.

Claims 1, 7, 15, and 18 are amended, claims 10-14, and 19 are canceled, and no claims are added; as a result, claims 1-9, 15-18, and 20 are now pending in this application.

§ 103 Rejection of the Claims

Claims 1-9, 15-18, and 20 were rejected under 35 USC § 103(a) as being unpatentable over Courtney (U.S. Patent No. 5,610,638) in view of Hackleman (U.S. Patent No. 5,742,305). Applicant respectfully traverses the rejection as follows.

Applicant's independent claim 1, as currently amended, recites:

> a scanning carriage supporting the printhead assembly to scan the printhead assembly across a sheet for printing a swath of ink thereon;
> a nozzle member coupled to the ink supply and having plural nozzles, wherein a predefined number of nozzles are offset;

The Examiner acknowledged on page 3 of the November 19, 2007, Final Office Action that the Courtney reference does not disclose a predefined number of nozzles being offset. However, the Examiner cites Figure 2 of the Hackleman reference as teaching a predefined number of nozzles being offset, and suggests it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify Courtney's printhead assembly to offset a plurality of nozzles.

Applicant respectfully notes that the Courtney reference appears to adjust the mechanics of printing an image using a thermal inkjet printhead based on temperature and image density information. Temperature is used to determine whether the image is to be produced using a single pass of the printhead across a recording medium (e.g., paper) or a doublepass (i.e., passing the printhead back and forth in two swathes across the same area of the paper media). (Abstract). In doublepass mode, the printhead appears to eject the required dots from alternate (i.e., non-adjacent) ink jets in a

checkerboard pattern. Every other ink jet (e.g., nozzle) appears to be used on the first pass, with the ink jets not used on the first pass being used on the second pass back. (Col. 1, lines 31-39).

Applicant respectfully submits that one of ordinary skill in the relevant art would not look to the Hackleman reference for the purposes of modifying the moving Courtney printhead assembly because the Hackleman reference appears to describe a stationary page-wide-array (PWA) printer element. (Abstract). The printhead described in the Hackleman reference appears to have horizontal rows of nozzles extending across the stationary PWA firing multiple nozzles arranged horizontally to produce a horizontal line across the width of a page. (Col. 6, lines 13-19; and Figures 1, 2, and 4). In contrast, Applicant's independent claim 1, as currently amended, recites, "a scanning carriage supporting the printhead assembly to scan the printhead assembly across a sheet for printing a swath of ink thereon".

The Courtney reference appears to describe producing a line of ink dots across a page by moving an ink jet printhead back and forth across the page, with a single ink jet producing all the ink dots comprising one horizontal line on the paper. However, the Courtney reference already accomplishes not having adjacent ink jets firing (at high temperatures) by using two passes and firing alternating (i.e., non-adjacent) ink jets in any one pass.

There does not appear to be motivation for one of ordinary skill in the relevant art to look to the Hackleman reference for a modification such as offsetting print nozzles, especially because Hackleman does not appear to describe any advantage to be achieved by doing so. Offsetting the columns of nozzles in the even-odd nozzle firing pattern (col. 4, lines 38-45) of the Courtney reference would not appear to produce any additional benefit because the adjacent nozzles do not eject at the same time, thereby defeating any advantage obtained by offsetting adjacent nozzles.

Hence, Applicant submits that it is inappropriate to combine the Courtney and Hackleman references in an obviousness rejection because Hackleman appears to describe no advantage in doing so, nor would any advantage be achieved in the

Courtney reference by doing so. As such, the combination of the Courtney and Hackleman references does not appear to describe, teach, or suggest "a predefined number of nozzles are offset", as recited in Applicant's independent claim 1, as currently amended, for purposes of "controlling the ejection of ink drops from the plural nozzles to maintain accuracy and precision of ink droplet placement by limiting the number of nozzles that fire at a given time while simultaneously decreasing a data pulse rate of firing of each nozzle at the given time", as also recited in Applicant's independent claim 1.

In addition, the Courtney reference appears to explicitly express a preference for a printhead having a plurality of aligned nozzles, as opposed to offset. (Col. 1, lines 14-17, and col. 3, lines 62-66). This appears to be an important feature because the printhead described by the Courtney reference passes back and forth across a page, each nozzle providing ink dots associated with one line across the entire width of the recording medium. Therefore, Applicant respectfully submits that modification of the Courtney reference away from the preferred vertical alignment of nozzles with the teachings of the Hackleman reference, which describes no advantage in doing so, lacks the requisite motivation to combine.

In the Response to Arguments section on page 4 of the Final Office Action, the Examiner states, "one would look to the offset arrangement of the nozzles in Hackleman's stationary printhead for the purposes of modifying the arrangement of the nozzles in Courtney's moving printhead to obtain the benefits as discussed above." All of "the benefits as discussed above" in the Final Office Action are taken from the claims and specification of the present application, and no benefits are described, taught, or suggested in the Courtney and Hackleman references for offsetting a number of nozzles, much less in a printhead assembly that scans across a sheet for printing a swath of ink thereon. As such, Applicant respectfully submits that the Examiner's combining the Courtney and Hackleman references as grounds for an obviousness rejection is based on improper hindsight reasoning.

Additionally, Applicant's independent claim 15, as currently amended, presently recites:

> scanning the printhead across a sheet for printing a swath of ink thereon;
>
> offsetting a predefined number of the nozzles to allow reduction of a data rate, amount of ink drops and firing frequency in a single print swath;

As such, Applicant respectfully submits that the presently claimed invention is neither taught by, nor made obvious in light of, the combination of the Courtney and Hackleman references. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 103 rejection of independent claims 1 and 15, as well as those claims that depend therefrom.

Moreover, with regard to claim 7, which depends from independent claim 1, and claim 18, which depends from independent claim 15, Applicant respectfully submits that the Courtney and Hackleman references, either individually or in combination, do not describe, teach, or suggest each and every element and limitation therein.

Dependent claim 7, as currently amended, presently recites, "a portion of the nozzles of the nozzle member are positioned in the nozzle member to align horizontally to perform dot column correction." The Examiner acknowledged on page 3 of the November 19, 2007, Final Office Action that the Courtney reference does not disclose, "a portion of the nozzles of the nozzle member aligned horizontally with dot column correction." However, the Examiner stated on page 4 that the Hackleman reference discloses this element in column 2, lines 34-40.

Applicant respectfully submits that the Hackleman reference does not appear to describe, teach, or suggest such an element in column 2, lines 34-40, nor anywhere else. The cited section follows a first sentence of the paragraph that states, "According to another potential approach, the media sheet could be slowed to allow a column of dots to print within a tolerable error criteria." (Col. 2, lines 32-34). The cited section, and following material, appears to describe how "the media sheet could be slowed to allow a column of dots to print within a tolerable error criteria". That is, the cited section does

not appear to be related in any manner to, "a portion of the nozzles of the nozzle member aligned horizontally with dot column correction."

Nonetheless, in the interest of clarifying the meaning of the claim as previously presented, Applicant has currently amended claim 7 to recite, "a portion of the nozzles of the nozzle member are positioned in the nozzle member to align horizontally to perform dot column correction." In addition, claim 18, as currently amended, presently recites, "horizontally positioning the nozzles of the nozzle member in the nozzle member to be aligned to perform dot column correction."

As such, Applicant respectfully requests reconsideration and allowance of dependent claims 7 and 18.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Robert Wasson at (360) 212-2338.

At any time during the pendency of this application, please charge any additional fees or credit overpayment to the Deposit Account No. 08-2025.

CERTIFICATE UNDER 37 C.F.R. §1.8: The undersigned hereby certifies that this correspondence is being transmitted to the United States Patent Office facsimile number (571) 273-8300 on

January 11, 2008

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